Applicant/Serial No.: Nicholas F. D'Antonio et al. / 09/937,357

Filed/Conf. No. 09/24/2001 / Conf. No. 7922

Examiner/Group: Ann Y. Lam / 1641

Response mailed: 3 / 3/ / 2006

Attorney File: DA7119US (#90036)

AMENDMENTS TO THE CLAIMS

1-35. (canceled)

36. (withdrawn) A station for re-energizing a hypodermic injection system, the

injection system having a mechanical energy storing apparatus for releasing stored energy when the

system makes an injection, the mechanical energy storing apparatus having an input mechanism for

cooperating with a re-energizing mechanism, said station comprising:

an energy transferring apparatus for transferring energy from an energy source;

a re-energizing mechanism for transmitting energy from said energy transferring

apparatus to the input mechanism of the energy storing apparatus, said re-energizing mechanism

cooperating with the input mechanism to effect the transmission of energy from said energy

transferring apparatus to the mechanical energy storing apparatus.

A station according to claim 1 wherein the injection system has a 37. (withdrawn)

predetermined external configuration and the input mechanism has a drivable surface for receiving

energy to be stored in the energy storing apparatus, and wherein said re-energizing apparatus has a

drive surface for cooperating with the drivable surface to re-energize the energy storing apparatus of

the injection system.

A station according to claim 37 wherein the input mechanism 38. (withdrawn)

comprising a cam mounted on an axle and the drivable surface is a surface of the axle, and wherein

said drive surface of said re-energizing apparatus is a device for contacting the drivable surface and

rotating the axle to rotate the cam.

2

- 39. (withdrawn) A station according to claim 37 wherein the injection system has a predetermined external configuration, and said station includes at least one nesting apparatus for receiving and supporting the injection system, and wherein said drive surface cooperates with the drivable surface of the injection system to re-energize the energy storing apparatus of the system.
- 40. (withdrawn) A system according to claim 39 wherein the energy storing apparatus of the injection system is at least one spring, and said re-energizing mechanism cocks the spring.
- 41. (withdrawn) A station according to claim 40 wherein the injection system further includes a rotatable cam for operating a device to cock the spring and the drivable surface is connected to the cam, and wherein said drive surface cooperates with the drivable surface to rotate the cam and cock the spring.
- 42. (withdrawn) A station according to claim 39 wherein the injection system includes apparatus for receiving disposable cartridges holding injectate, and wherein said station further including a supporting device to hold the injection system for reloading the injection system with fresh cartridges containing injectate.
- 43. (withdrawn) A station according to claim 36 wherein said re-energizing mechanism includes a manually operable member for transmitting energy from a person operating said member to the mechanical energy storing apparatus.
- 44. (withdrawn) A station according to claim 36 wherein said re-energizing mechanism includes a compressed gas operable member for transmitting energy from the compressed gas to the mechanical energy storing apparatus.
- 45. (withdrawn) A station according to claim 36 wherein said re-energizing mechanism includes an hydraulically operable member for transmitting energy from the device exerting pressure on the hydraulic fluid to the mechanical energy storing apparatus.

46. (withdrawn) A station according to claim 36 wherein said re-energizing mechanism includes an ignitable gas operable member for transmitting the ignition energy to the mechanical energy storing apparatus.

47. (withdrawn) A station according to claim 36 wherein said re-energizing mechanism includes an electrically operable member for transmitting electrical energy to the mechanical energy storing apparatus.

48. (withdrawn) A hypodermic injection system comprising:

an injector housing for housing at least one injectate container for an injectate to be injected from the system into a body;

a container-holding member attached to said housing for holding the respective injectate containers in position(s) spaced from said housing, the forward end of the at least one container having no physical contact with said housing to avoid contamination of said housing during or after use, said holding member holding the container(s) in position during the injection process for proper injection into the body, said holding member having a front end;

latching and release apparatus incorporated in or on said housing for releasably latching said holding member to said housing during the injection process, and for releasing said holding member and the containers held by said holding member from said housing without any physical contact by the user, for non-contaminating disposal after the injection process, said latching and release apparatus supporting said holding member spacing the front end of said holding member from said housing to avoid contact of said housing with any contaminant on the front end of said holding member or the cartridges;

an actuable injectate release device for applying pressure on the respective injectate containers to transmit injectate from said containers for the injection process, said

injectate release device comprises energy storage apparatus for storing energy to be applied to the respective injectate containers; and

a manually operable trigger device;

wherein said trigger device actuates said storage apparatus to cause said energy storage apparatus to apply energy to the respective containers and transmit the injectate from the containers.

49. (canceled)

50. (withdrawn) A hypodermic injection system having an injection housing for dispensing injectate from at least two injectate cartridges, each of the cartridges having a dispensing channel with an exit nozzle, and a plunger for moving through each of the cartridges to dispense injectate from each of the cartridges; said system comprising:

a holding member for holding said respective injectate cartridges in positions spaced from said housing, the forward end of the cartridges having no physical contact with said housing to avoid contamination of the housing during or after use, with said dispensing channels directed in a common direction;

a latching and release apparatus included in or on said housing for latching said holding member to said housing and for releasing said holding member and the injectate cartridges held thereby, said latching and release apparatus supporting said holding member spacing the front end of said holding member from said housing to avoid contact of said housing with any contaminant on the front end of said holding member or the cartridges;

a ram apparatus having separate rams, each of said rams being movable with respect to one of said cartridges to move the respective plungers for forcing injectate from said cartridges through the dispensing channels and the individual exit nozzle;

a carriage movable from a set position to a dispensing position for moving said ram apparatus to apply pressure during an injection process;

a spring apparatus movable from a cocked position for moving said carriage from the set position to the dispensing position;

a carriage resetting apparatus for moving said carriage from the dispensing position to the set position, and for re-cocking said spring apparatus, to enable the replacement of the injectate containers; and

a releasable latching device for latching said spring apparatus in the cocked position.

51. (withdrawn) A hypodermic injection system comprising:

an injector housing for housing at least one injectate container for an injectate to be injected from the system into a body;

a holding member for holding the respective injectate container(s) in positions spaced from said housing, the forward end of the containers having no physical contact with said housing to avoid contamination of the housing during or after use, said holding member holding in position during the injection process for proper injection into the body; and

latching and release apparatus included in or on said housing for releasably latching said containers held by said member from said housing without any physical contact by the user, for non-contaminating disposal after the injection process, said latching and release apparatus supporting said holding member spacing the front end of said holding member from said housing to avoid contact of said housing with any contaminant on the front end of said holding member or the containers.

52-58. (canceled)

59. (withdrawn) A hypodermic injection system comprising:

an injector housing for housing at least one injectate container for an injectate to be injected from the system into a body;

a container-holding member for holding the respective injectate containers in positions spaced from said housing, the forward end of the cartridges having no physical contact with said housing to avoid contamination of the housing during or after use, said container-holding member holding the containers in position during the injection process for proper injection into the body;

latching and release apparatus included in or on said housing for releasably latching said holding member to said housing during the injection process, and for releasing said holding member and the containers held by said holding member from said housing alternatively either without any physical contact by the user, for non-contaminating disposal after the injection process, or with physical contact by the user, said latching and release apparatus supporting said holding member, spacing the front end of said holding member from said housing to avoid contact of said housing with any contaminant on the front end of said holding member or the cartridges;

an actuable injectate release device for applying pressure on the respective injectate containers to transmit injectate from said containers for the injection process, said injectate release device comprises energy storage apparatus for storing energy to be applied to the respective injectate containers; and

a manually operable trigger device;

wherein said trigger device actuates said storage apparatus to cause said energy storage apparatus to apply energy to the respective containers and transmit the injectate from the containers.

60-61. (canceled)

62. (withdrawn) A hypodermic injection system comprising:

an injector housing for housing at least one injectate container for an injectate to be injected from the system into a body;

a member for holding the respective injectate container(s) in position(s) spaced from said housing, the forward end of the at least one container having no physical contact with said housing to avoid contamination of said housing during or after use, said member holding the container(s) in position during the injection process for proper injection into the body; and

manually actuable latching and release apparatus for releasably latching said containers held by said member from said housing alternatively either without any physical contact by the user, for non-contaminating disposal after the injection process, or with physical contact by the user, said latching and release apparatus spacing the front end of said container(s) from said housing to avoid contact of said housing with any contaminant on the front end of said container(s).

- 63. (canceled)
- 64. (withdrawn) A hypodermic injection system for dispensing injectate into a body, said system comprising:

an injection housing including at least two injectate cartridges, each of said cartridges having a dispensing channel with an exit nozzle, and a plunger for moving through each of the cartridges to dispense injectate from the cartridges;

a holding member for holding the respective injectate cartridges with said dispensing channels directed in a common direction;

a latching and release apparatus included in or on said housing for latching said holding member to said housing and for releasing said holding member and the injectate cartridges held thereby for non-contaminating disposal after the injection process;

a ram apparatus having separate rams, each movable with respect to one of said cartridges to move the respective plungers simultaneously for forcing injectate simultaneously from said cartridges through the dispensing channels and the individual exit nozzles;

a carriage movable from a set position to a dispensing position for moving said ram apparatus at uniform pressures during an injection process;

a spring apparatus movable from a cocked position for moving said carriage from the set position to the dispensing position;

a carriage resetting apparatus for moving said carriage from the dispensing position to the set position, and for recocking said spring apparatus, to enable the replacement of the injectate containers; and

a releasable latching device for latching said spring apparatus in the cocked position.

- 65. (withdrawn) A system according to claim 64 and further including a jet injector housing wherein said housing is for housing said holding member, said ram apparatus, said carriage, said spring apparatus, said latching device, said carriage resetting apparatus and said releasable latching device.
- 66. (withdrawn) A hypodermic injection system according to claim 64 wherein said latching and release apparatus supports said holding member spacing the front end of said holding member away from said housing to avoid contact of said housing with any contaminant on the front end of said holding member or the cartridges.
- 67. (withdrawn) A hypodermic system for dispensing injectate into a body for at least two containers having a discharge end, said system comprising:

an injection housing for including at least two injectate containers, each container discharging injectate from the respective discharge ends in response to the application of a predetermined force to the injectate in the container;

a holding member for holding the at least two injectate containers with the respective discharge ends facing in a common direction, said holding member having a front end;

a latching and release apparatus included in or on said housing for releasably latching said holding member to said housing and for releasing said holding member for non-contaminating disposal after the injection process, said latching and release apparatus supporting said holding member and spacing the front end of the holding member away from the housing to avoid contact of said housing with any contaminant on the front end of said holding member or the containers; and

apparatus for simultaneously applying a predetermined force simultaneously to the injectate in the containers to effect the simultaneous discharge of injectate from the containers.

- 68. (canceled)
- 69. (withdrawn) A hypodermic injector system according to claim 23 wherein said latching and release apparatus is manually actuable.
- 70. (withdrawn) A hypodermic injector system according to claim 48 wherein said latching and release apparatus is manually actuable.
- 71. (withdrawn) A hypodermic injector system according to claim 49 wherein said latching and release apparatus is manually actuable.
- 72. (withdrawn) A hypodermic injector system according to claim 50 wherein said latching and release apparatus is manually actuable.
- 73. (withdrawn) A hypodermic injector system according to claim 51 wherein said latching and release apparatus is manually actuable.

- 74. (withdrawn) A hypodermic injector system according to claim 53 wherein said latching and release apparatus is manually actuable.
- 75. (withdrawn) A hypodermic injector system according to claim 59 wherein said latching and release apparatus is manually actuable.
- 76. (withdrawn) A hypodermic injector system according to claim 60 wherein said latching and release apparatus is manually actuable.
- 77. (withdrawn) A hypodermic injector system according to claim 61 wherein said latching and release apparatus is manually actuable.
- 78. (withdrawn) A hypodermic injector system according to claim 63 wherein said latching and release apparatus is manually actuable.
- 79. (withdrawn) A hypodermic injector system according to claim 67 wherein said latching and release apparatus is manually actuable.
- 80. (withdrawn) A hypodermic injection system for injecting injectate from the forward end of an injectate-holding container, said system comprising:

an injection housing for housing at least two injectate-holding containers for an injectate to be injected from the system into a body;

a disposable container-holding member for holding the respective injectate-holding containers both in position during the injection process for proper injection into the body and spaced from said injection housing, said container-holding member having a front end, the forward end of the containers having no physical contact with said injection housing to avoid contact with any contamination on the forward end of the injectate-holding containers, and said container-holding member comprising a structure having openings for holding each of the injectate-holding containers;

latching and release apparatus for releasably latching said holding member to said housing during the injection process, and said latching and release apparatus spacing the at least one injectate-holding container and the front end of said container-holding member away from the housing to avoid contaminating the housing, said latching and release apparatus releasing said container-holding member and the injectate-holding containers held by said container-holding member from said housing without any physical contact by the user for non-contaminating disposal after the injection process; and

guard walls around said openings for preventing splashing of the injectate or blood during an injection process.

81. (withdrawn) A hypodermic injection system for injecting injectate from the forward end of an injectate holding container, said system comprising:

an injection housing for housing at least two injectate containers for an injectate to be injected from the system into a body;

a disposable container-holding member for holding the respective injectate containers both in position during the injection process for proper injection into the body and spaced from said injection housing, said container-holding member having a front end, the forward end of the containers having no physical contact with said injection housing to avoid contact with any contamination on the forward end of the containers, and said container-holding member comprising a structure having openings for holding each of the containers;

latching and release apparatus for releasably latching said holding member to said housing during the injection process, and said latching and release apparatus spacing the at least one container and the front end of said container-holding member away from the housing to avoid contaminating the housing, said latching and release apparatus releasing said holding member and

the containers held by said container-holding member from said housing without any physical contact by the user for non-contaminating disposal after the injection process; and

splash wall guards around the outer edge of said container holding member for preventing the splashing of the injectate or blood during an injection process.

82. (withdrawn) A hypodermic injection system for injecting injectate from the forward end of an injectate holding container, said system comprising:

an injection housing for housing at least one injectate container for an injectate to be injected from the system into a body;

a container-holding member for holding the respective injectate containers both in position during the injection process for proper injection into the body and spaced from said injection housing, said container-holding member comprising a front end and a plate with a peripheral edge having a groove, the forward end of the containers having no physical contact with said injection housing to avoid contact with any contamination on the forward end of the containers; and

latching and release apparatus for releasably latching said holding member to said housing during the injection process, and said latching and release apparatus spacing the at least one container and the front end of said container-holding member away from the housing to avoid contaminating the housing, said latching and release apparatus releasing said holding member and the containers held by said container-holding member from said housing without any physical contact by the user for non-contaminating disposal after the injection process; said latching and release apparatus comprising:

at least one locking member for cooperating with said container-holding member to lock said holding member to said housing, said at least one locking member enters said groove of said container-holding member plate to lock said plate to said injection housing and said locking member being removable from said groove to release said plate;

releasing means for releasing said locking member to enable said holding member to be properly positioned on said housing and for activating said locking member to lock said properly positioned holding member to said housing; and

an ejection device for ejecting said holding member and the respective containers held by said holding member from said housing.

83. (withdrawn) A hypodermic injection system comprising:

at lest two disposable injectate cartridges, each of said cartridges comprising:

an outer wall having an inner wall surface defining an inner chamber, and

a plunger engaging said inner wall surface and being movable in said chamber, said plunger defining an injectate-holding portion of said chamber and said chamber having an injectate dispensing end having an exit nozzle, said dispensing end being configured to engage the respective cartridge-holding surfaces, said plunger being drivable into said injectate-holding portion to dispense the injectate through said respective nozzles from said respective cartridges during the injection process;

said injectate-holding portion comprising a rupturable seal dividing said holding portion into two compartments, one of said compartments holding a lyophilized part of an injectate and the other of said compartments holding a predetermined amount of fluid for mixing the components of the injectate.

an injection housing for housing at least two injectate cartridges for an injectate to be injected from the system into a body;

a cartridge-holding member for holding the respective at least two injectate cartridges both in proper position during the injection process for proper injection into the body and spaced from said injection housing, said cartridge-holding member having a front end, the forward end of the respective cartridges having no physical contact with said injection housing to avoid contact with any contamination on the forward end of the cartridges; and

latching and release apparatus for releasably latching said holding member to said housing during the injection process, and said latching and release apparatus spacing the respective cartridges and the front end of said cartridge-holding member away from the housing to avoid contaminating the housing, said latching and release apparatus releasing said holding member and the respective cartridges held by said cartridge-holding member from said housing without any physical contact by the user for non-contaminating disposal after the injection process.

84. (withdrawn) A system according to claim 83 and further including a device for rupturing said seal.

85. (withdrawn) A hypodermic injection system comprising:

at least two injectate cartridges having perforators for piercing the skin of a body and through which injectate flows during an injection process;

an injection housing for housing at least two injectate cartridges for an injectate to be injected from the system into a body;

a cartridge-holding member for holding the respective injectate cartridges both in position during the injection process for proper injection into the body and spaced from said injection housing, said cartridge-holding member having a front end, the forward end of the cartridges having no physical contact with said injection housing to avoid contact with any contamination on the forward end of the cartridges; and

latching and release apparatus for releasably latching said holding member to said housing during the injection process, and said latching and release apparatus spacing the at least two cartridges and the front end of said cartridge-holding member away from the housing to avoid contaminating the housing, said latching and release apparatus releasing said holding member and the cartridges held by said cartridge-holding member from said housing without any physical contact by the user for non-contaminating disposal after the injection process.

86. (withdrawn) A hypodermic injection system for injecting injectate from the forward end of an injectate holding container, said system comprising:

an injection housing for housing at least one injectate container for an injectate to be injected from the system into a body;

a disposable container-holding member for holding the respective injectate containers both in position during the injection process for proper injection into the body and spaced from said injection housing, said container-holding member comprising a structure having a front end and openings for holding said respective injection containers, the forward end of the respective containers having no physical contact with said injection housing to avoid contact with any contamination on the forward end of the respective containers;

latching and release apparatus for releasably latching said holding member to said housing during the injection process, and said latching and release apparatus spacing the at least one container and the front end of said container-holding member away from the housing to avoid contaminating the housing, said latching and release apparatus releasing said holding member and the containers held by said container-holding member from said housing without any physical contact by the user for non-contaminating disposal after the injection process; and

a guard wall around said openings of the respective containers for preventing splashing of the injectate or blood during an injection process.

87. (withdrawn) A hypodermic injection system comprising:

an injector housing for housing at least six injectate containers for an injectate to be injected from the system into a body;

a container-holding member attachable to said housing for holding the respective injectate containers in position(s) spaced from said housing, the forward end of the at least six containers having no physical contact with said housing to avoid contamination of said housing during or after use, said member holding the container(s) in position during the injection process for proper injection into the body;

latching and release apparatus included in or on said housing for releasably latching said holding member to said housing during the injection process, and for releasing said holding member and the containers held by said holding member from said housing, alternatively either without any physical contact by the user, for non-contaminating disposal after the injection process, or with physical contact by the user, said latching and release apparatus supporting said holding member, spacing the front end of said holding member from said housing to avoid contact of said housing with any contaminant on the front end of said holding member or the containers; and

at least six exit nozzles arranged in a rectangular geometric pattern with one of said exit nozzles at each corner and a pair of exit nozzles at the midpoint of opposing long sides of the rectangular pattern, to inject injectate while preventing the overlap of the injectate from each exit nozzle during the injection process.

88-91. (canceled)

92. (currently amended) A hypodermic injection system according to claim 1 for injecting injectate from the forward end of an injectate holding container, said system comprising:

an injector housing for housing at least one injectate container for an injectate to be injected from the system into a body;

a disposable container-holding member for holding the respective injectate containers in position during the injection process for proper injection into the body and spaced from said injection housing, said disposable container-holding member having a front end, the forward end of the containers having no physical contact with said injection housing to avoid contact with any contamination on the forward end of the containers;

latching and release apparatus for releasably latching said disposable container-holding member to said housing during the injection process, and said latching and release apparatus spacing the at least one container and the front end of said disposable container-holding member away from the housing to avoid contaminating the housing, said latching and release apparatus releasing said disposable container-holding member and the containers held by said disposable container-holding member from said housing without the need for any physical contact by the user for non-contaminating disposal after the injection process, and

a release structure operatively connected to said container-holding member and being actuable to release said container-holding member and the injectate containers held in said container-holding member without requiring human contact with said container-holding member or the containers, wherein said release structure comprises a release button.

93. (currently amended) A hypodermic injection system according to claim 23 for dispensing injectate into a body, said system comprising:

an injector housing for including at least two injectate cartridges, each of the cartridges having a dispensing channel with an exit nozzle, and a plunger for moving through each of the cartridges to dispense injectate from the cartridges;

a holding member for holding the respective injectate cartridges in positions spaced from said housing, the forward end of the cartridges having no physical contact with said housing to avoid contamination of the housing during or after use, with said dispensing channels directed in a common direction, said holding member having a front end;

a latching and release apparatus included in or on said housing for latching said holding member to said housing and for releasing said holding member and the injectate cartridges held thereby for non-contaminating disposal after the injection process, said latching and release apparatus supporting said holding member and spacing the front end of said holding member away from said housing to avoid contact of said housing with any contaminant on the front end of said holding member or the cartridges;

a ram apparatus having separate rams, each movable with respect to one of the cartridges to move the respective plungers for forcing injectate from the cartridges through the dispensing channels and the individual exit nozzle;

a carriage movable from a set position to a dispensing position for moving said ram apparatus to develop pressures to effect the forcing of injectate from the cartridges during an injection process;

a spring apparatus movable from a cocked position for moving said carriage from the set position to the dispensing position;

a carriage resetting apparatus for moving said carriage from the dispensing position to the set position, and for recocking said spring apparatus, to enable the replacement of the injectate containers;

a releasable latching device for latching said spring apparatus in the cocked position;

and

a release structure operatively connected to said holding member and being releasable to release said holding member and the injectate cartridges held in said member without requiring human contact with said holding member or the cartridges, wherein said release structure comprises a release button.

94. (currently amended) A hypodermic injection system according to claim 1 for injecting injectate from the forward end of an injectate holding container, said system comprising:

an injector housing for housing at least one injectate container for an injectate to be injected from the system into a body wherein said injector housing has a housing front end for holding said container-holding member[[,]];

a disposable container-holding member for holding the respective injectate containers in position during the injection process for proper injection into the body and spaced from said injection housing, said disposable container-holding member having a front end, the forward end of the containers having no physical contact with said injection housing to avoid contact with any contamination on the forward end of the containers;

latching and release apparatus for releasably latching said disposable container-holding member to said housing during the injection process, and said latching and release apparatus spacing the at least one container and the front end of said disposable container-holding member away from the housing to avoid contaminating the housing, said latching and release apparatus releasing said disposable container-holding member and the containers held by said disposable container-holding member from said housing without the need for any physical contact by the user for non-contaminating disposal after the injection process, and

a release structure operatively connected to said container-holding member and being actuable to release said container-holding member and the injectate containers held in said container-holding member without requiring human contact with said container-holding member or

the containers, [[and]] said release structure emprises comprising a front end trigger located near said housing front end.

95. (currently amended) A hypodermic injection system according to claim 23 for dispensing injectate into a body, said system comprising:

an injector housing for including at least two injectate cartridges, each of the cartridges having a dispensing channel with an exit nozzle, and a plunger for moving through each of the cartridges to dispense injectate from the cartridges wherein said injector housing has a housing front end for holding said holding member[[,]];

a holding member for holding the respective injectate cartridges in positions spaced from said housing, the forward end of the cartridges having no physical contact with said housing to avoid contamination of the housing during or after use, with said dispensing channels directed in a common direction, said holding member having a front end;

a latching and release apparatus included in or on said housing for latching said holding member to said housing and for releasing said holding member and the injectate cartridges held thereby for non-contaminating disposal after the injection process, said latching and release apparatus supporting said holding member and spacing the front end of said holding member away from said housing to avoid contact of said housing with any contaminant on the front end of said holding member or the cartridges;

a ram apparatus having separate rams, each movable with respect to one of the cartridges to move the respective plungers for forcing injectate from the cartridges through the dispensing channels and the individual exit nozzle;

a carriage movable from a set position to a dispensing position for moving said ram apparatus to develop pressures to effect the forcing of injectate from the cartridges during an injection process;

a spring apparatus movable from a cocked position for moving said carriage from the set position to the dispensing position;

a carriage resetting apparatus for moving said carriage from the dispensing position to the set position, and for recocking said spring apparatus, to enable the replacement of the injectate containers;

a releasable latching device for latching said spring apparatus in the cocked position; and

a release structure operatively connected to said holding member and being releasable to release said holding member and the injectate cartridges held in said member without requiring human contact with said holding member or the cartridges, [[and]] said release structure comprises comprising a front end trigger located near said housing front end.

96. (currently amended) A hypodermic injection system according to claim 1 and further for injecting injectate from the forward end of an injectate holding container, said system comprising:

an injector housing for housing at least one injectate container for an injectate to be injected from the system into a body;

a disposable container-holding member for holding the respective injectate containers in position during the injection process for proper injection into the body and spaced from said injection housing, said disposable container-holding member having a front end, the forward end of the containers having no physical contact with said injection housing to avoid contact with any contamination on the forward end of the containers;

latching and release apparatus for releasably latching said disposable containerholding member to said housing during the injection process, and said latching and release apparatus spacing the at least one container and the front end of said disposable container-holding member away from the housing to avoid contaminating the housing, said latching and release apparatus releasing said disposable container-holding member and the containers held by said disposable container-holding member from said housing without the need for any physical contact by the user for non-contaminating disposal after the injection process;

a release structure operatively connected to said container-holding member and being actuable to release said container-holding member and the injectate containers held in said container-holding member without requiring human contact with said container-holding member or the containers; and

a spring apparatus for biasing said container-holding member to be released from said housing, releasable locking members for releasably locking said container-holding member to said housing against the bias of said spring apparatus, and said release structure being actuable to unlock said locking member to effect the release of said container-holding member from said housing.

97. (currently amended) A hypodermic injection system according to claim 23 and further for dispensing injectate into a body, said system comprising:

an injector housing for including at least two injectate cartridges, each of the cartridges having a dispensing channel with an exit nozzle, and a plunger for moving through each of the cartridges to dispense injectate from the cartridges;

a holding member for holding the respective injectate cartridges in positions spaced from said housing, the forward end of the cartridges having no physical contact with said housing to avoid contamination of the housing during or after use, with said dispensing channels directed in a common direction, said holding member having a front end;

a latching and release apparatus included in or on said housing for latching said holding member to said housing and for releasing said holding member and the injectate cartridges

held thereby for non-contaminating disposal after the injection process, said latching and release apparatus supporting said holding member and spacing the front end of said holding member away from said housing to avoid contact of said housing with any contaminant on the front end of said holding member or the cartridges;

a ram apparatus having separate rams, each movable with respect to one of the cartridges to move the respective plungers for forcing injectate from the cartridges through the dispensing channels and the individual exit nozzle;

a carriage movable from a set position to a dispensing position for moving said ram apparatus to develop pressures to effect the forcing of injectate from the cartridges during an injection process;

a spring apparatus movable from a cocked position for moving said carriage from the set position to the dispensing position;

a carriage resetting apparatus for moving said carriage from the dispensing position to the set position, and for recocking said spring apparatus, to enable the replacement of the injectate containers;

a releasable latching device for latching said spring apparatus in the cocked position;

a release structure operatively connected to said holding member and being releasable to release said holding member and the injectate cartridges held in said member without requiring human contact with said holding member or the cartridges; and

a spring apparatus for biasing said holding member to be released from said housing, releasable locking members for releasably locking said holding member to said housing against the bias of said spring apparatus, and said release structure being actuable to unlock said locking member to effect the release of said holding member from said housing.

* * *